

REMARKS

Reconsideration of this application, as amended, is respectfully requested. Please amend claims 1-6 and add claims 27-39. Applicants reserve the right to prosecute any cancelled or otherwise unclaimed subject matter in this or another application. Consideration and entry of this amendment and remarks is respectfully requested.

Claim Amendments

The claim amendments are supported in the originally filed specification and do not add any new matter. Support for tapered transport channels can be found in paragraph 117. Support for serpentine and surround bypass channels may be found in paragraph 116 Figure 3 and 4A, and paragraph 121 respectively. Support for uniform flow rates and flow rate variation may be found in paragraphs 117 and 120. Support for oligonucleotide containing primers and probes and for cleavable moieties may be found in paragraphs 140 and 141. Support for a symmetric microfluidic device that allows the inlet and outlet channels to be switched without affecting the fluid flow characteristics may be found in paragraph 112. Support for cross-section area of the bypass channel being substantially larger than the first conduit may be found in paragraph 121.

Claim rejection 35 USC 112

The Examiner has rejected claims 1-6 under 35 USC 112, second paragraph as being indefinite because the second recitation of “said second” is unclear as to whether it refers to second conduit or second transport channel. Claim 1 has been amended to clarify that second refers to second conduit and thus the Examiner’s rejection is rendered moot.

Claim rejection 35 USC 102

The Examiner has rejected claims 1-6 under 35 USC 102(e) as anticipated by Gong et al. (2003/0138819). The Examiner states that “regarding claim 1, Gong teaches a microfluidic device comprising a plurality of chambers (assay stations, 26), each having a first and second conduit (channels 24/28). The device further comprises a first and

second transport channel (22/30) providing a bypass channel at the first end in flow communication with the conduits and chambers (Fig. 1, 5 and Abstract).” The Examiner further states that interior surfaces coated with a hydrophobic film (¶ 87, 90, 91); distribution channel (20, Fig 1); transportation channels containing oil (54 ¶ 108); channels containing aqueous solutions (¶126); channels containing air (¶83) and chambers containing beads (¶ 194) are found in Gong et al.

It is unclear what the Examiner regards as the bypass channels in Gong. Although the Examiner cites Fig. 1, 5 and Abstract for the proposition that Gong et al. teaches bypass channels it is unclear to which channels the Examiner is referring. To the extent that Gong teaches bypass channels there is no discussion in Gong of serpentine or channel surrounding bypass channels. Gong et al. does not disclose tapered transport channels which provide the ability to maintain a constant volume flow rate through the chambers as required by all pending claims. Gong et al does not disclose oligonucleotides attached to the chambers in which the oligonucleotides comprise several primers and/or probes separated by cleavable moieties. Gong et al. does not disclose a symmetrical microfluidic device that allows the inlet and outlet channels to be switched without affecting the fluid flow characteristics. The claim amendments render the Examiner’s rejections moot.

The Examiner has rejected claims 1-3 under 35 USC 102(b) as anticipated by Peters et al. (DE 1980499). The Examiner states that “regarding claim 1, Peters teaches a microfluidic device comprising a plurality of chambers (3), each having a first and second conduit (feed canal 5). The device further comprises a first and second transport channel (connection channels 7/11) providing a bypass channel at the first end in flow communication with the conduits and chambers (Fig. 1 and Abstract).”

It is unclear what the Examiner regards as the bypass channels in Peters. Although the Examiner cites Fig. 1 and Abstract for the proposition that Peters teaches bypass channels it is unclear to which channels the Examiner is referring. To the extent that Peters teaches bypass channels there is no discussion in Peters of serpentine or channel surrounding bypass channels. Peters does not disclose tapered transport channels which provide the ability to maintain a constant volume flow rate through the chambers as required by all pending claims. Peters does not disclose oligonucleotides attached to the

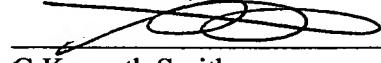
chambers in which the oligonucleotides comprise several primers and/or probes separated by cleavable moieties. Peters does not disclose a symmetrical microfluidic device that allows the inlet and outlet channels to be switched without affecting the fluid flow characteristics. The claim amendments render the Examiner's rejections moot.

CONCLUSIONS

Applicants respectfully request consideration and entry of this reply. Applicants believe the claims are in condition for allowance and request that a Notice of Allowance be issued as soon as possible. The Examiner is encouraged to contact the Applicants' undersigned representative if it is believed doing so would expedite prosecution of this application.

Respectfully submitted,

Date: November 16, 2011


G Kenneth Smith
Reg. No. 43,135

G Kenneth Smith, Ph.D., J.D.
1645 Briarwood Circle
Bethlehem, PA 18015
Tel: 610-838-9427
kenxeo@aol.com